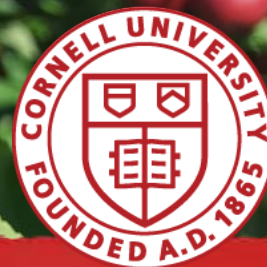


Tree Fruit News

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General Discussion on the Use of Harvest Management Plant Growth Regulators in Eastern New York for 2020

Daniel J. Donahue & Michael Basedow, CCE Eastern NY Commercial Horticulture Program

In 2020 there are 3 materials which are registered for control of pre-harvest drop in apples: NAA, ReTain and Harvista:

- NAA provides modest drop control because it inhibits abscission. However, fruit softening and reduced storage life are likely if warm weather follows application, or if harvest is delayed until ripening has been substantially advanced.
- ReTain is a plant growth regulator which inhibits ethylene production in the fruit and reduces pre-harvest drop. It also reduces fruit cracking and fruit greasiness, but delays the development of fruit red color about 1 week. Application rates and timings vary by variety. Applied at varying timings (2-4 weeks pre-harvest) and rates (1/3 to 1 pouch/A), ReTain provides different levels of control of preharvest drop and fruit maturity. Its performance is improved when combined with NAA since the two products work synergistically; NAA will work to reduce fruit drop, while the ReTain suppresses the increased production of ethylene triggered by the NAA.
- Harvista is a newer class of drop control chemical for foliar application, which inhibits the action of ethylene in the fruit and reduces fruit drop. The AgroFresh Company provides very specific, on-site recommendations for the timing of Harvista applications to its customers.

Recent Harvest Management PGR Strategies, Still Under Testing

- Delaying Honeycrisp Harvest: A single pouch/acre rate of ReTain, 24 days pre-first pick will significantly delay Honeycrisp harvest. This application has the potential to delay harvest 2.5 to 4 weeks. If you wait long enough, color will eventually develop. Pre-harvest drop was not excessive at 13% in our 2016 Hudson Valley trial, and was not reduced by the ReTain treatment. A second, full pouch treatment 10 days prior to first pick did not have any measurable beneficial effects. Serious soft scald developed in the ReTain treated fruit when rated after 90 days in refrigerated storage in our 2016 trial. If you try using ReTain on Honeycrisp in this manner, and the fruit is stored, monitor the stored fruit on a weekly basis for soft scald. Until you gain some

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storage experience with this program, we can't recommend controlled atmosphere storage.

- "Stacking" Harvista on top of an earlier ReTain application: Several growers in the Hudson Valley have tried this strategy on McIntosh and Honeycrisp in the last few years. We have not seen any independent university research results to report on this strategy. Certainly expensive, but does it pay off? We need to see some hard data before it can be recommended. If you try it, leave an unsprayed control and contact your CCE-ENYCHP fruit specialist to help with fruit evaluations.

McIntosh Harvest Management PGR Recommendations for Eastern New York State

- NAA: NAA requires 1-2 days to come into effect and will provide a degree of drop control for a period of 7- 10 days, although drop control is not always reliable. In the case where you may need 3-4 days of drop control and long-term storage is not planned, NAA can be useful. **However, since NAA stimulates ripening and can provide unreliable drop control when applied alone, in general the use of NAA alone is not recommended.**
- ReTain Timing: ReTain can be applied 2-4 weeks prior to your anticipated normal harvest. In general, apply ReTain at 3 weeks before harvest in cool years, and at 4 weeks before harvest in hot years. Growers in the Hudson Valley commonly apply ReTain 4 weeks before the estimated first harvest date, with good success. The long-range weather forecast as of July 1 suggests that the first half of July will be warmer than average, followed by a cooling trend through the month of August and the lead-up to McIntosh harvest in Eastern New York.
- ReTain Application Rates: One pouch of ReTain per acre will give the best drop control, but will delay color development by 7-10 days. A ½ pouch of ReTain will also work, and has a less negative effect on fruit color, but the control of fruit drop will wear off sooner (perhaps too soon).
- ReTain + NAA: Dr. Terence Robinson's research in the last several years has shown the best combination of drop control with the least negative effect on fruit color is achieved by splitting a full rate of ReTain into 2 sprays of ½ rate of ReTain each time and including 10ppm NAA in both sprays. Application of the first 1/2 pouch of ReTain per acre + 10 ppm NAA (4oz/100 gal) should be made 3 weeks before normal harvest. The second application of 1/2 pouch of ReTain per acre + 10 ppm NAA is timed for one week before normal (untreated) harvest.
- Surfactants: It is critical to include an organosilicone surfactant with ReTain especially when combined with NAA. The organosilicone surfactant, such as Silwet (12 oz. /100 gallons), improves the uptake of ReTain better than other surfactants thus ensuring that sufficient ReTain is absorbed by the leaf to suppress the stimulatory effect of NAA on ethylene production.

Gala Harvest Management PGR Recommendations for Eastern New York State

- Effects of ReTain on Gala: Fruit will remain on the tree an additional 7-14 days. This also leads to improved fruit size, as fruit will increase in size approximately 1% per day. Reduced stem end cracking and greasiness in 2nd & 3rd picks. Aspects of fruit maturity are delayed, and fruit appear to ripen more evenly on the tree. As a result, it is sometimes possible to reduce the number of picks necessary down to one or two.
- ReTain Rates: Apply a ½ pouch of Retain per acre. The 1– 2 pouch rates are almost never recommended since ReTain at higher rates has a very strong negative effect on Gala color development. Our trial in 2016 showed that Gala treated with these high rates will eventually color if harvest is delayed 2.5-3 weeks.
- ReTain Timing: Apply 2-3 weeks before expected first harvest.
- Surfactants: It is critical to include an organosilicone surfactant with ReTain. The organosilicone surfactant, such as Silwet (12 oz. /100 gallons), improves the uptake of ReTain better than other surfactants.

Honeycrisp Harvest Management PGR Recommendations for Eastern New York State

- Honeycrisp is a low ethylene producing variety that has very uneven ripening but can have significant preharvest drop in some years. The use of ReTain is recommended in blocks that have had a pre-harvest drop problem in the past.
- ReTain Timing: Apply three weeks before expected harvest.
- ReTain Rates: Apply 1/3 of a pouch/acre rate of Retain on Honeycrisp. Champlain Valley growers may want to consider a ¼ pouch rate and avoid blocks with a history of soft scald, as this disorder is most prevalent in late harvested fruit.
- Surfactants: It is critical to include an organosilicone surfactant with ReTain. The organosilicone surfactant, such as Silwet (12 oz. /100 gallons), improves the uptake of ReTain better than other surfactants.

Harvista Observations, Benefits and Recommendations

- Pre-harvest fruit drop control.
- Safe delay of harvest for additional color and fruit size development.
- Maintenance of fruit firmness before and/or after harvest (storage benefits are short term).
- Slowed starch conversion.
- Delayed and reduced incidence of water core.
- Greater consistency in maturity for improved storage performance.

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- Fewer pick dates required for multiple-pick varieties.
- Recent research has demonstrated a reduction in soft scald in Honeycrisp.

Harvista Timing & Rates: Harvista is applied 21 to 3 days prior to the anticipated harvest date (of untreated fruit), at a rate of 48 to 242 fl oz per acre, and carries a 3 day pre-harvest interval. The exact application timing recommended is based on the starch pattern index, and many cultivars have their own recommended values for when the application should be made. We recommend getting in touch with AgroFresh for specific rate guidance.

Harvista must not come into contact with copper. It should go on when temps are below 95°F, and when conditions will be dry for at least one hour following application. Anecdotal observations in commercial orchards suggest that the application of Harvista under calm and slow drying conditions can improve the consistency of results. Please contact AgroFresh technical support for specific guidance.



APPLE VARIETY	OPTIMUM AVERAGE STARCH INDEX (at application*)
Gala	1.5 - 3.5
McIntosh	3.0 - 4.0
Honeycrisp	4.0 - 6.0
Spartan	1.5 - 2.5
Macoun	2.0 - 3.5
Empire	2.0 - 3.5
Jonagold	5.5 - 7.0
Red Delicious	1.5 - 3.0
Golden Delicious	3.0 - 5.0
Idared	2.5 - 4.5
Rome	2.0 - 4.0
Fuji	2.5 - 4.5
SnapDragon™	2.5 - 3.5
RubyFrost™	2.0 - 3.0
Sweet Cheeks™	5.0 - 7.0

*Starch Index scale of 1 to 8 (Generic Starch-Iodine Index for Apples, Cornell Cooperative Extension Info Bull 221)

Application timing for Harvista is based on the average starch iodine index. Consult your AgroFresh technical support for specific timing and rate recommendations. Table courtesy of AgroFresh.

Harvista is delivered through an in-line injection system from a nurse tank, which can be retrofitted to an existing sprayer using an AgroFresh conversion kit. Photo: M. Basedow

2019 New Variety Survey Results Review

Michael Basedow & Andy Galimberti, CCE Eastern NY Commercial Horticulture

Given the availability of many new apple cultivars, we released a “new and managed” variety survey in 2019 to get a sense for which new apple cultivars growers in Eastern New York are currently planting, and to gather any initial thoughts from those that have been trialing them in our regional growing conditions. We asked orchards across Eastern New York about the following cultivars :

- | | | |
|----------------|-----------------|----------------|
| ✓ Ambrosia | ✓ Pazazz | ✓ SnowSweet |
| ✓ CrimsonCrisp | ✓ Rosalee | ✓ WildTwist |
| ✓ EverCrisp | ✓ RubyFrost | ✓ SweetTango |
| ✓ KORU | ✓ Scarlet Crush | ✓ Sweet Zinger |
| ✓ Ludacrisp | ✓ Smitten | ✓ Zestar! |
| ✓ Modi | ✓ SnapDragon | |

14 orchards responded to our survey. Of the 17 cultivars listed above, 11 were being grown by survey respondents. The five cultivars most commonly grown by respondents were SnapDragon (NY-1), Ambrosia, CrimsonCrisp, EverCrisp, and RubyFrost (NY-2) (Figure 1, next page).

In addition to asking which cultivars are currently being grown, we also asked which cultivars growers believed to have good future commercial potential. The varieties growers perceived to have the best commercial potential were EverCrisp, SnapDragon, SweetTango,

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Ambrosia, and CrimsonCrisp (Figure 2). It is worth noting that we did not separate out responses based on whether this potential was for wholesale or retail sales.

Here are some comments on the most commonly planted new cultivars in our survey:

SnapDragon (cv. NY-1) is the most commonly grown cultivar we asked growers about. Respondents have planted SnapDragon on a variety of rootstocks. G.935 and G.41 have been the most commonly planted, while some plantings are also on G.30, G.11, and the traditional Malling rootstocks M.26 and M.9 Nic 29. SnapDragon has relatively low scion vigor. In a recent [Fruit Quarterly article](#), Dr. Terence Robinson recommends low vigor varieties be planted to G.935 or G.969 in the Champlain Valley, while in the Hudson Valley G.41 or G.214 might be more appropriate, particularly on virgin soils (Robinson and Fazio, 2019). SnapDragon is susceptible to fire blight, and is susceptible to cloister spot which can also cause blossom blast, so preventative sprays are recommended (Gašić et al., 2018). It is also has minor susceptibility to cedar apple rust. Trees retain fruit mummies, so black rot control is also very important.

There have been reports of fruit finish issues, including scarf skin on fruit from the lower tree canopy. Stem end flesh browning can also be a problem in stored fruit, and may occur more in fruit treated with 1-MCP postharvest. Greasiness, core, and vascular browning have also been observed. To reduce the incidence of storage related disorders, fruit maturity should be carefully monitored to prevent harvesting fruit that are over-mature. We also recommend storing SnapDragon at 38°F (Brown et al, 2012).

Growers ranked SnapDragon second in terms of perceived commercial potential. Respondents commented on the high quality and excellent flavor, but mentioned the variety's low vigor and small fruit size are challenges that growers will continue to contend with. SnapDragon is managed by Crunch Time Apple Growers, and availability is limited to group members.

EverCrisp (cv. MAIA-1), was the fourth most commonly planted variety by survey respondents, and was ranked first by growers for perceived future commercial potential. Respondents are growing this variety primarily on Bud 9 and G.11. It is rated as having low to medium vigor, so a slightly more vigorous rootstock like G.41 or M.9 Nic 29 would be recommended for growers planting this variety further north. EverCrisp is susceptible to scab, powdery mildew, soft rot, and fire blight (Brown and Maloney, 2018). Stem end russetting, fruit cracking, internal browning, and watercore are also issues.

Growers commented Evercrisp has very good storage potential, but there are concerns over fruit color for those looking to market this variety through wholesale channels. EverCrisp ripens late in the harvest season, which will limit its suitability for commercial production in the most northern portions of Eastern New York. The variety is available by membership with the Midwest Apple Improvement Association,

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Which varieties do you currently have planted?

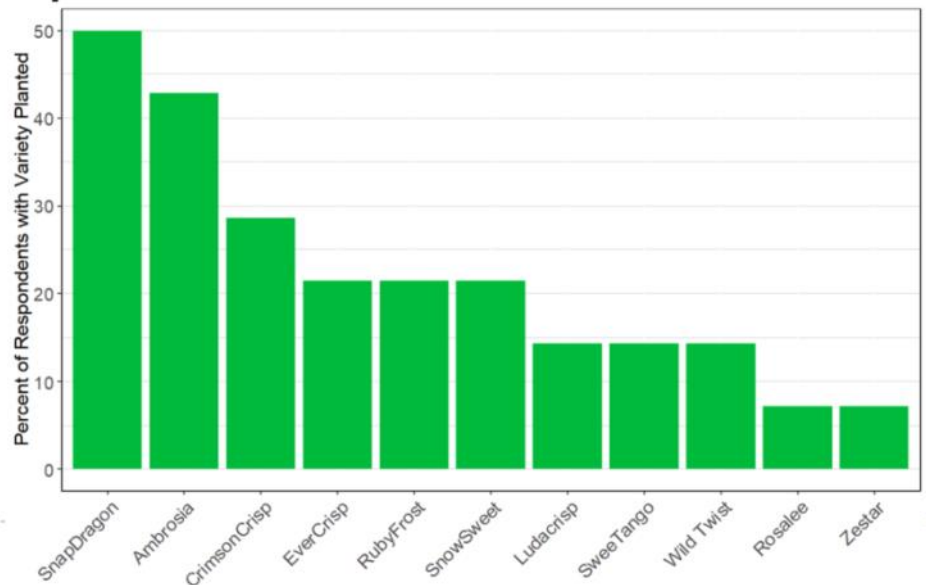


Figure 1: Percent of respondents currently growing the variety.

Which varieties do you think have commercial potential for the future?

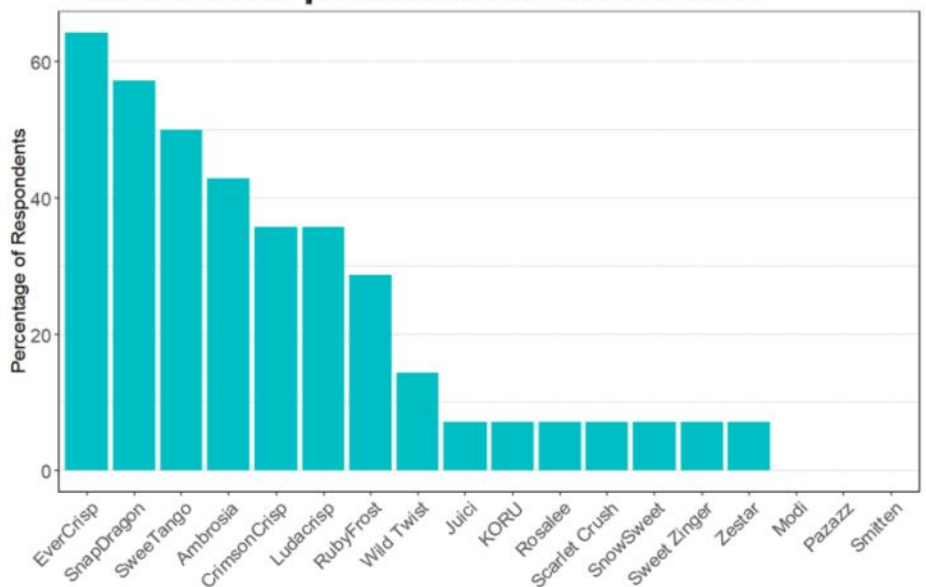


Figure 2: Percent of respondents that indicated the variety has future commercial potential.

which any grower can join.

Ambrosia was the second most commonly planted new variety among respondents, and has been planted on G.935, M.9 337, M.9 Nic 29, and Bud 9. Reports from Ontario suggest Ambrosia tends to have low to moderate scion vigor, and rootstocks with vigor similar to M.9 EMLA or greater have been recommended in Ontario conditions. Ambrosia tends to grow very upright, and require good horticultural practices to balance shoot and fruit growth. This variety tends to produce numerous spurs rather than long shoots, so trees can be planted more closely together. It tends to bear very well, and requires attentive thinning. It is very susceptible to apple scab, and is susceptible to fire blight. Ambrosia has a narrow harvesting window, and fruit are susceptible to calyx bowl splitting, pre-mature breakdown, and soft scald if it is harvested when over-mature. Internal browning is another storage concern, and is often associated with soft scald in late harvested fruit (Ehsani-Moghaddam and DeEll, 2009). Fruit tend to quickly soften in storage, and should be stored in CA if they are to be held for more than 60 days (Cline, 2009). Coloring can be a concern in regions where Honeycrisp are difficult to color.

Ambrosia had the 4th highest percentage of positive grower responses for future commercial potential. Many respondents indicated that they have not been growing Ambrosia long enough to determine how well it will market. I asked Amanda Green, Tree Fruit Specialist with the Ontario Ministry of Agriculture, Food, and Rural Affairs, how Ambrosia is performing on the Canadian market. She indicated the variety is slowly growing in popularity with consumers, and Ontario growers are currently receiving similar or just slightly better returns on Ambrosia relative to Gala. For additional information on growing Ambrosia, we recommend the following articles out of [the Ontario Ministry of Agriculture, Food, and Rural Affairs](#) and [Michigan State University](#). Ambrosia had been under plant patent and license protection, but the patent expired in 2017, and the license expired in the United States in 2019.

CrimsonCrisp was the third most planted variety among respondents, and had the fifth most positive responses for perceived future commercial potential. Respondents have mostly planted it on G.41 and Bud 9, and it is reported to have low to moderate scion vigor. CrimsonCrisp was bred to be scab-immune, but is highly susceptible to cedar apple rust (Biggs et al., 2009), and is susceptible to powdery mildew and fire blight. Fruit tend to be small to medium in size (Brown and Maloney, 2013). This variety tends to be low yielding relative to other commonly available scab-resistant varieties (Agnello et al., 2015). Fruit tend to hang very well on the tree.

Growers commented it has good fruit quality, is a relatively grower-friendly apple, and stores well. This variety may be a good choice for a pick-your-own or retail farm stand. CrimsonCrisp is available to all growers for planting.

RubyFrost (cv. NY-2) was the fifth most planted variety by our respondents, and was the seventh highest ranked in terms of perceived future commercial potential. Respondents have mostly planted RubyFrost on G.41, G.11, and Bud 9. It is rated as having high scion vigor.



RubyFrost trees are highly susceptible to fire blight, and are slightly susceptible to both cedar apple rust and powdery mildew. In hot and dry years, RubyFrost is susceptible to sunburn (Brown and Maloney, 2018) and it is susceptible to stress-induced watercore (Sazo and Cheng, 2017). RubyFrost can also have issues with superficial scald, core browning, and stem end flesh browning out of storage, but 1-MCP treatment and CA/DCA storage will help to mitigate these issues. Greasiness can be an issue of late harvested fruit. A storage temperature of 38°F is also recommended to discourage disorder development (Brown et al., 2012). Growers commented RubyFrost has a nice appearance, and that it colors and sizes well. RubyFrost is managed by Crunch Time Apple Growers, and availability is limited to members.

SweeTango (cv. MN 1914 'Minneiska') was the seventh most commonly grown variety by respondents, but had the third highest percentage of respondents that felt it had good future commercial potential. It is grown on a variety of rootstocks in Eastern New York, including G. 41, G.11, V.1, M.26, M.9, and Bud 9. It was developed by the University of Minnesota as a cross of their varieties Honeycrisp and Zestar!, and has moderate scion vigor. It has average susceptibility to scab and fire blight, and is reported to have a storage potential of three to four months, which is relatively good given its ripening season. SweeTango may develop some watercore. Fruit set, russetting, and lenticel injury have sometimes been challenges with this variety (Lehnert, 2014). Growers commented that this variety appears to have good consumer acceptance. SweeTango is a managed variety, available only

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to members of the Next Big Thing grower's cooperative.

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Paycheck Protection Program—Loan Forgiveness Changes and Current Policy Update

Elizabeth Higgins, CCE Eastern NY Commercial Horticulture

By the time you read this article, the Paycheck Protection Program (PPP) will have ended. Unless of course there is a change and it doesn't end. There is still about \$130 billion available as of today, and it is likely that Congress will look to use that funding to help businesses as COVID-19 continues to restrict economic activity. If you didn't apply for the PPP, but now are wishing you had, stay tuned!

If you received PPP funding, you are now moving into the loan forgiveness portion of the program. According to SBA, you need to apply for loan forgiveness within 10 months after the last day of the covered period. At this point, the PPP loan is no longer deferred, and the borrower must begin paying principal and interest.

PPP loan forgiveness has been a moving target, and because of this it has been prudent to take a "wait and see" approach before applying, especially if you didn't meet the original conditions for 100% PPP loan forgiveness (use funds within 8 weeks 75% for payroll and 25% rent, utilities and mortgage interest). The Paycheck Protection Program Flexibility Act of 2020 which became law on June 5th made achieving 100% loan forgiveness more accessible to businesses. It extended the covered period of loan forgiveness from 8 weeks to 24 weeks after the date of loan disbursement, giving participants much more time to spend their loan on payroll. Businesses with PPP funds can opt to use the 8-week period or spend the funds over a 24-week period. The Act also reduced the amount that needs to be used for payroll to 60% of the loan (from 75%). This increases the amount

that can be used for other allowable non-payroll purposes (rent, utilities, and mortgage interest) to 40%.

There is some flex in what non-payroll expenses can be covered. For example, SBA indicated that non-payroll costs are eligible if they were paid during the covered period or incurred during the covered period and paid on or before the next regular billing date, even if the billing date is after the covered period. *Example:* A borrower's covered period begins on June 1 and ends on July 26. The borrower pays its May and June electricity bill during the covered period and pays its July electricity bill on August 10, which is the next regular billing date. The borrower may seek loan forgiveness for its May and June electricity bills, because they were paid during the covered period. In addition, the borrower may seek loan forgiveness for the portion of its July electricity bill through July 26 (the end of the covered period), because it was incurred during the covered period and paid on the next regular billing date. The exception is that the CARES Act specifically prohibits using the funds for pre-payments of mortgage interest.

There are some things that will reduce the amount forgiven. If you received an EIDL Advance, your loan forgiveness will be reduced by that amount. In general, a reduction in FTE employees during the covered period or the alternative payroll covered period also reduces the loan forgiveness amount by the same percentage as the percentage reduction in FTE employees. SBA finally defined FTE as

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40 hours per week, so 2 part time workers, averaging 20 hrs per week, is 1 FTE. The borrower must first select a reference period:

- i) February 15, 2019 through June 30, 2019;
- ii) January 1, 2020 through February 29, 2020; or
- iii) (iii) in the case of a seasonal employer, either of the two preceding methods or a consecutive 12-week period between May 1, 2019 and September 15, 2019.

If the average number of FTE employees during the covered period or the alternative payroll covered period is less than during the reference period, the total eligible expenses available for forgiveness is reduced proportionally by the percentage reduction in FTE employees.

SBA does account for good faith efforts on the part of the employer to meet the FTE requirements. Employees whom the borrower laid off but offered to rehire are generally exempt from the CARES Act's loan forgiveness reduction calculation. This exemption is also available if a borrower previously reduced the hours of an employee and offered to restore the employee's hours at the same salary or wages. Finally, FTE is not reduced if your workers have requested reduced hours or have quit or been terminated for cause or if you are seasonal, tried to hire and did not have enough applicants. You do need to document these events.

Finally, one concern I heard from growers was "How will SBA review borrowers' required good-faith certification concerning the necessity

of their loan request?" Some growers were worried that they would be asked to return their PPP loan if they ended up having a good season. SBA has stated in their FAQ dated June 25, that any borrower that received PPP loans with an original principal amount of less than \$2 million will be deemed to have made the required certification concerning the necessity of the loan request in good faith. SBA has determined that this safe harbor is appropriate because borrowers with loans below this threshold are generally less likely to have had access to adequate sources of liquidity in the current economic environment than borrowers that obtained larger loans and they feel that it is more appropriate to audit larger loans. Given on-going economic uncertainty this makes a lot of sense.

Resources:

SBA PPP page <https://www.sba.gov/funding-programs/loans/coronavirus-relief-options/paycheck-protection-program>

6/25 FAQ: <https://www.sba.gov/sites/default/files/2020-06/Paycheck-Protection-Program-Frequently-Asked-Questions%20062520-508.pdf>

Policy Guidance on Interim Final Rule: <https://www.sba.gov/document/policy-guidance-ppp-interim-final-rule-revisions-loan-forgiveness-interim-final-rule-sba-loan-review-procedures>

EZ-PPP Loan Forgiveness Application <https://www.sba.gov/document/sba-form-paycheck-protection-program-ez-loan-forgiveness-application-6-16-2020>

EZ-PPP Loan Forgiveness Instructions: <https://www.sba.gov/document/sba-form-paycheck-protection-program-ez-loan-forgiveness-application-instructions-borrowers-6-16-2020>

Premier Apple Cooperative 2020 National Crop Estimate Lower than 2019 Production

Mark Wiltberger, CCE Lake Ontario Fruit Program

The Premier Apple Cooperative has made its national apple crop estimate for the 2020 crop year.

The total U.S. 2020 apple crop is estimated at 244.6 million bushels, down 17.7 million bushels, or 7%, from the 2019 crop (Table 1). The total U.S. apple crop estimate is down 5.1 million bushels, or 2%, from the 5-year average of 249.7 million bushels.

The New York 2020 crop is estimated at 30 million bushels, down 1.5 million bushels, or 5%, from 2019 production. The estimate is down 1.8 million bushels, or 6%, from the five-year average of 31.8 million bushels.

The Washington State 2020 crop is estimated at 166 million bushels, down 15 million bushels, or 8%, from 2019 production of 181.0 million bushels. The estimate is down 0.9 million bushels, or 1%, from the 5-year average of 166.9 million bushels.

The Michigan 2020 crop is estimated at 25.5 million bushels, up 3 million bushels, or 13%, from 2019 production of 22.5 million bushels. The estimate is up 1

Table 1: Premier Apple Cooperative 2020 National Crop Estimate

USApple Premier Apple Cooperative 2020 Apple Crop Estimate						
States	2019 USDA FINAL	5-Year Average	Premier 2019 Estimate	Premier 2020 Estimate	2020 Premier % change from	
					USDA 2019	5-Yr Avg
New York	31,429	31,786	31,000	30,000	-5%	-6%
Pennsylvania	12,071	11,948	11,500	9,500	-21%	-20%
Virginia	4,524	4,734	4,425	3,800	-16%	-20%
Total East	48,024	48,468	46,925	43,300	-10%	-11%
Michigan	22,524	24,529	28,441	25,500	13%	+4%
Total Midwest	22,524	24,529	28,441	25,500	13%	+4%
Total East and	70,548	72,996	75,366	68,800	-2%	-6%
Washington	180,952	166,905	182,000	166,000	-8%	-1%
California	7,262	5,900	5,900	5,900	-19%	+0%
Oregon	3,571	3,886	4,000	3,900	9%	+0%
Total West	191,786	176,690	191,900	175,800	-8%	-1%
Total U.S.	262,333	249,687	267,266	244,600	-7%	-2%

Source: USDA, National Agricultural Statistics Service, Noncitrus Fruits and Nuts Summary, various years and USApple
NC - No change or the change is less than one percent.

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million bushels, or 4%, from the 5-year average of 24.5 million bushels.

The Pennsylvania 2020 crop is estimated at 9.5 million bushels, down 2.6 million bushels, or 21%, from 2019 production of 12.1 million bushels. The estimate is down 2.4 million bushels, or 20%, from the 5-year average of 11.9 million bushels.

In the East and Midwest, potential for a big crop was there early in 2020. Regions and individual producers saw variation in potential crop size due to a series of freeze events that needed to be assessed region-by-region and orchard-by-orchard. In addition, unusually warm and dry conditions during thinning and into June led to additional fruit drop in some areas.

The Washington State estimate reflects a return to more typical production levels after a very large crop in 2019.

Streptomycin Resistant Fire Blight in 2020

Anna Wallis & Kerik Cox, Cornell University and Janet van Zoeren, CCE Lake Ontario Fruit Program

Fire blight has begun rearing its ugly head this season. In a large part of the state, an extended bloom period accompanied by very warm weather led to long periods of 'severe risk' for blossom blight infection. In many cases, multiple streptomycin applications were required to provide adequate control, and already we have heard reports of symptoms despite growers' best efforts. Now is an important time to be scouting for both blossom and shoot blight.

In NY State, fire blight is generally well controlled through the judicious use of the antibiotics streptomycin and kasugamycin, integrated with other management practices. Unfortunately, streptomycin resistant *E. amylovora* (SmR Ea) was found in New York in 2002, from 2011-2013, and again in 2019. With adequate testing and management, we can continue to track down and control SmR Ea.

Fire Blight Surveys.

As part of the effort to quickly identify and contain any SmR Ea, programs at Cornell AgriTech have conducted fire blight surveys since 2002. It was through these routine surveys that SmR Ea was originally identified, making an immediate, successful response to manage the outbreak possible. In these surveys, samples are tested for the presence of the pathogen, SmR phenotype, and genetic mechanism of resistance (there are two currently known in NY strains). In addition, genetic fingerprinting is used to identify the strain of *E. amylovora*. This allows us to determine distribution and investigate movement of both resistant and sensitive strains of the pathogen.



A Paula Red showing multiple fire blight strikes. Photo: M. Basedow

SmR in 2019.

In 2019, fire blight sample testing uncovered three occurrences of streptomycin resistance, including one in a new planting. The CRISPR profile of these isolates matched those of the original outbreak in 2001 suggesting that the strain from the original outbreak is still lurking in Western NY.

Aside from these detections, streptomycin resistance has not been detected in NY for the past four years. If we keep practicing resistance management, by rotating bactericides and antibiotics with limited use of streptomycin application after bloom, we may never experience widespread outbreaks of streptomycin resistance as we did from 2011 to 2013. However, if

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blossom blight or trauma blight develop after streptomycin applications on your farm, it may be best to have some samples assessed for streptomycin resistance to ensure the future success of chemical management programs for your operation.

Testing in 2020.

This season, it will be important to scout for fire blight in apple blocks and note any potential failures of streptomycin. The Cox lab, partnered with the NYFVI and LOF, is continuing to test samples to understand the prevalence of streptomycin resistance and movement of *E. amylovora* strains in NY. You can help us help you by sending fire blight samples in for testing. Make sure to keep samples moist and viable, as if you were planning to graft it or use it in a flower basket. If possible, collect samples with visible ooze. See sample submission form with instructions later in the newsletter.

Managing Fire Blight Outbreaks.

After identifying fire blight in your orchard, we recommend taking the following management actions to control it. Apply prohexadione-calcium at the highest rate for the planting (6-12 oz/100 gal) and allow 5 days for the product to affect the tree. Afterwards, prune out existing and newly developing shoot blight every two weeks for the rest of the season. Prune during dry weather and avoid dragging plant material through the block, which may introduce new tissue damage and infections. In preliminary research conducted last season, we observed trends of reduced risk of spreading infection by 1) using clean cuts (as opposed to breaking off infected shoots), and 2) sanitizing between pruning cuts. The work has not been replicated, but it may be prudent to follow these extra precautions if possible. Remove any trees where fire blight has reached the central leader. If pruning seems to stimulate additional shoot growth, a second application of prohexadione-calcium could be warranted. Avoid additional streptomycin applications after bloom, unless an infection event is predicted.

For additional guidance on sample collection in Eastern New York, please reach out to either Mike Basedow (north of Albany) or Dan Donahue (south of Albany).

To access the form to submit samples, please visit: https://rvpadmin.cce.cornell.edu/uploads/doc_884.pdf

Guidance for Essential Workers Arriving in NY from States with Significant Community Spread

Richard Stup, Ag Workforce Development Specialist

On June 24, 2020 the NY State Department of Health (NYSDOH) issued [Interim Guidance for Quarantine Restrictions on Travelers Arriving in New York State Following Out of State Travel](#). This was in response to the [high rates of COVID-19 infection now occurring](#) in many southern U.S. states. NYSDOH is providing a [regularly updated list](#) of the restricted states and it currently includes 16 states. The NYSDOH Guidance requires anyone entering NY from those states to quarantine for 14 days. Some NY agricultural producers source part of their seasonal farm workforce from the southern U.S., especially during the fall harvest when labor demands reach peak. The June 24 NYSDOH Guidance contains the following language specific to long-term, essential workers:

- Long Term – for essential workers traveling to New York State for a period of greater than 36 hours, requiring them to stay several days. This includes instances such as an essential worker working on longer projects, fulfilling extended employment obligations, and other longer duration activities.
- Essential workers should seek diagnostic testing for COVID-19 as soon as possible upon arrival (within 24 hours) to ensure they are not positive.
- Essential workers should monitor temperature and signs of symptoms, wear a face covering when in public, maintain social distancing, clean and disinfect workspaces for a minimum of 14 days.
- Essential workers, to the extent possible, are required to avoid extended periods in public, contact with strangers, and large congregate settings for a period of, at least, 7 days.

Note that the first bulleted item above indicates that essential workers should seek diagnostic testing as soon as possible upon arrival. It seems logical that if an essential worker receives a negative result from a COVID-19 diagnostic test then they can discontinue quarantine, we are working to confirm with the state that this is the case but **do not have confirmation** at the time of this post.

Farm employees continue to be classified as “essential workers,” this means that farm employees can work during their quarantine period. They are required to maintain a strict routine while at work and employers are well-advised to support and reinforce this working quarantine in order to protect others employees. NYSDOH and NYS Dept of Ag and Markets clearly described the working quarantine protocol in the [Interim Guidance for Prevention and Response of COVID-19 at Farms](#) issued on May 27, 2020.

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Workers who are considered essential personnel, as described in the [Department's Health Advisory: Protocols for Essential Personnel to Return to Work Following COVID-19 Exposure or Infection](#), who meet quarantine criteria described above, may be allowed to work in accordance with the Department's Health Advisory and if they:

- Remain asymptomatic.
- Remain in quarantine when not at work. Workers may be quarantined in their own home or at a location designated by the operator that meets LHD (local health department) quarantine requirements.
- If it is difficult to provide for 6 foot separation between essential workers while in quarantine, essential workers may be quarantined in a recreational vehicle, a motel/hotel room, at home in their own room, etc.
- Rely on LHDs and employers to provide essential needs such as healthcare, food, medications, and laundry.
- Undergo temperature monitoring and symptom checks upon arrival to work, and at least every 12 hours thereafter while at work, and self-monitor (i.e. take temperature, assess for symptoms) twice a day when not at work. Operators must have thermometers on site to perform temperature checks.
- Wear a face covering while in the presence of any other individual.
- Immediately stop work and notify their supervisor if they develop ANY symptoms consistent with COVID-19. The LHD may be consulted on next steps as outlined below.
- Testing should be prioritized for essential personnel with symptoms.

COVID-19 diagnostic testing is available for all essential personnel. Contact your [local health department](#) for details about how to get the test.

Managing Fruit and Vegetable Farms During COVID-19: What Actions Should Farms Take?

Q & A Session Video Recording Available

A recording of the Q&A Session for managing fruit and vegetable farms during COVID-19, held on Wednesday, June 24th, is now available on the [LOF YouTube channel](#) at the following link:

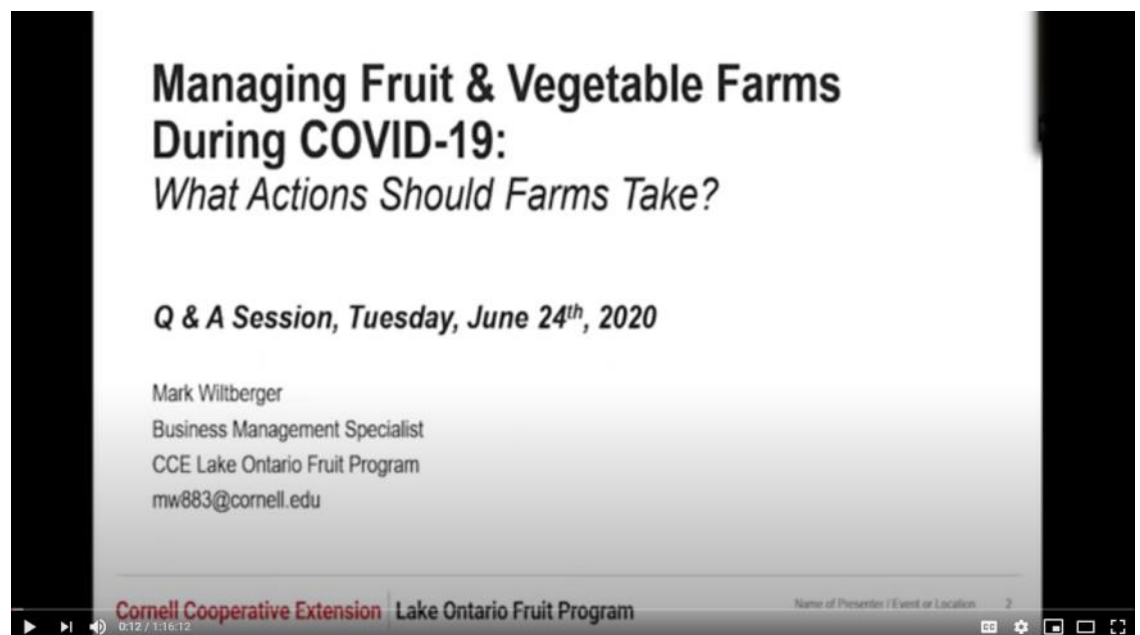
Managing Fruit and Vegetable Farms During COVID-19: What Actions Should Farms Take?

<https://youtu.be/PsS7lrMWsCc>

In this recording, a panel of Cornell agricultural specialists addresses questions farm owners and managers have about managing workers in the field, orchard, or vineyard. The panel addresses questions about managing a retail enterprise, such as a farm market, farm stand, pick-your-own, or CSA operation. Such questions include: When should my employees wear face coverings? Should I screen my visitors and customers? How do I make a NY Forward Business Safety Plan?

There are also answers to questions about U-Pick operations as U-Pick farms adapt to new ways of doing things at the beginning of the pick-your-own season.

The Q&A Session series continues on July 16 at noon for a session on managing apple packing facilities during COVID-19. You can register for this session here: https://cornell.zoom.us/webinar/register/WN_raf3pi6YS5qYVOTWA_rV7g



July 9th Listening Session Will be Held for New York State Apple Producers Changes Proposed for Apple Crop Insurance Program

ITHACA, N.Y. — The USDA – Risk Management Agency is hosting a July 9, 2020 listening session for New York State Apple producers to discuss proposed changes to the apple crop insurance program.

In 2017 and 2018, RMA and its contractor, Agralytica, met with apple growers and other insurance stakeholders to discuss the apple program and identify potential changes to enhance coverage while also addressing increasing loss ratios and resultant premium costs. This listening session is a follow-up to those previous sessions. During this session, RMA will present proposed changes to growers and their insurance representatives and ask for their comments. The feedback received will be used to evaluate the effectiveness of the proposed changes.

For more information on the listening session and how to register, please [click here](https://agriskmanagement.cornell.edu/files/2020/06/2020_VLS_Ann_NY.pdf). (https://agriskmanagement.cornell.edu/files/2020/06/2020_VLS_Ann_NY.pdf)

For agricultural risk management and crop insurance resources for New York State, please visit: <https://agriskmanagement.cornell.edu>

Cornell University delivers crop insurance education in New York State in partnership with the USDA, Risk Management Agency. This material is funded in partnership by USDA, Risk Management Agency, under award number RM18RMETS524C018

–Cornell University USDA, Risk Management Agency

Ontario Pick-Your-Own Apple Orchard in 2020 Round Table

2020 has presented many unique challenges for growers this year, one of those challenges will be managing your pick-your-own orchard. On July 7th at 7:00 pm on Zoom, specialists from the Ontario Ministry of Agriculture Food and Rural Affairs will be sharing guidelines for managing a pick-your-own apple orchard in 2020; we'll hear from some experiences of pick-your-own strawberry operations; followed by an open discussion for the audience to ask questions and share some ideas or strategies.

When: Jul 7, 2020 07:00 PM Eastern Time (US and Canada)

Register in advance for this meeting: [https://zoom.us/meeting/register/tJwrd-2rrzooHdP4I975KLushnYIS_30a2On](https://zoom.us/join/joinMeeting?jmtk=UjRrd-2rrzooHdP4I975KLushnYIS_30a2On)

After registering, you will receive a confirmation email containing information about joining the meeting.

Best Management Practices for U-Pick Farms During the COVID-19 Pandemic

U-Pick is a critical direct marketing approach for many of our farms and provides customers with a unique connection to fresh produce grown close to home. In light of what we understand about the spread of COVID-19, new management practices will be needed to protect your farm team and your customers. The best management practices document available at the following link provides recommended practices and communication strategies for U-Pick operations for the 2020 season: https://rvpadmin.cce.cornell.edu/uploads/doc_864.pdf

You can find additional information regarding COVID-19 on our team website at: <https://enych.cce.cornell.edu/covid-19.php>



UPCOMING EVENTS

Bumblebee Biology and Management for Pollination

July 8, 3pm

Penn State Center for Pollinator Research

Bumble bees are well-known for their fuzzy appearance and charismatic buzzing as they fly from flower to flower, but did you know these characteristics are part of the reason they're such great pollinators? This webinar will provide recommendations for landscape management to support these pollinators and discuss the commercial bumble bee industry. Whether a farmer or gardener, crop pollinators such as honeybees and native wild bees are important components to our managed and natural landscapes.

Visit this link for more information: <https://extension.psu.edu/pollinator-series-bumble-bee-biology-and-management-for-pollination>

Controlling Fruit Rots and Other Summer Diseases

July 8, 4-5pm

CCE ENYCHP

Join us as Dr. Srdjan Acimovic of the Hudson Valley Research Lab discusses the basic biology and his recommended management approaches for the following diseases: Black rot, White rot, Bitter rot, Sooty Blotch and Fly Speck, and Marssonina Leaf and Fruit Blotch. Srdjan will also discuss how to utilize the NEWA and RimPro disease prediction models for summer disease management.

Register here: <https://bit.ly/summerfruitdisease>

How Should My Business Respond to COVID-19? Q & A Zoom Session for Apple Packing Facilities

July 16, 12-1:15pm

CCE Lake Ontario Fruit Program

Addressing Questions about:

- Writing a NY Forward Business Safety Plan
- Guidance for Food Processing Facilities
- Requirements vs. Guidance
- Best Management Practices (BMPs) in Packing Houses
- BMPs in the Office
- Harvest Planning for COVID-19 Issues
- BMPs for employee COVID-19 Education
- Questions submitted ahead of time
- Questions submitted during the Q&A session

More information: <https://bit.ly/applepackingcovidresponse>

High Tech Precision Orchard Spraying

July 20, 4-5pm

Join us the afternoon of July 20th via Zoom to learn what's new in orchard precision spraying technology. We'll be joined by Dr. Jason Deveau, Dr. Heping Zhu, and Steve Booher.

Jason is the Application Technology Specialist with the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA). Jason literally "wrote the book" on airblast spraying, and will discuss how to improve spray targeting as well as the benefits of rate controllers.

We will then hear from Dr. Heping Zhu and Steve Booher. Heping is an Agricultural Engineer with the US Department of Agriculture Agricultural Research Service, and has extensively researched intelligent spray application technologies for horticultural crops. Steve is the founder and CEO of Smart Guided Systems, who worked closely with Heping to commercialize their research into the Smart Apply Intelligent Spray Control System™. Heping and Steve will discuss the science behind and the commercial application of their system, which utilizes pulsed lasers and advanced computer algorithms to remotely sense the volume of each tree to deliver a precise spray volume in real time.

Register here: <https://tinyurl.com/precisionspraying>

The Eastern New York Commercial Horticulture Program is a Cornell Cooperative Extension partnership between Cornell University and the CCE Associations in these seventeen counties: Albany, Clinton, Columbia, Dutchess, Essex, Fulton, Greene, Orange, Montgomery, Putnam, Rensselaer, Saratoga, Schenectady, Schoharie, Ulster, Warren & Washington.

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